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10/505,406	03/28/2005	Satoshi Okada	0717-0525PUS1	8973

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
AMIN, JWALANT B	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
04/03/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/505,406	OKADA, SATOSHI	
	Examiner	Art Unit	
	JWALANT AMIN	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-6 and 8 have been considered but are moot in view of the new ground(s) of rejection.

2. Regarding claims 1-6 and 8, the applicant further argues that Hill et al. does not disclose or suggest "... the correspondence indicated by the stored table is determined using a predetermined correction pattern". (see pg. 10 of applicant's remarks).

3. However, the examiner interprets that Hill et al. in view of Koyama et al. teaches exactly the same. Please refer to the rejection of claim 1 below for details.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (US 6243070; hereinafter Hill), and further in view of Koyama et al. (US 6542161; hereinafter Koyama).

The applied reference of Koyama has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed

but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

6. Regarding claims 1, 6 and 8, Hill (figs. 5, 7A-C, 10A-B, 11A-B, 12A-B, 13-15) teaches a character display apparatus (fig. 5), a program for causing a character display apparatus to execute a character display process (program modules, fig. 5), and a recording medium storing a program (magnetic disk and optical disk, fig. 5), comprising a display device (display device 600) comprising a plurality of pixels (col. 10 lines 49-51); a control section (operating system) for controlling the display device (col. 11 lines 62-64), wherein each of the plurality of pixels comprises a plurality of sub-pixels arranged in predetermined direction (horizontal) (fig. 7A, col. 11 lines 1-2), and at least one of a plurality of color elements is assigned to each of the plurality of sub-pixels (RGB pixel sub-components, col. 10 lines 61-63, col. 11 lines 1-2); the control section determines at least one sub-pixel, to which a basic portion indicating a skeleton of a character is assigned (figs. 11A-B shows basic portion of a scaled image generated by

hinting is positioned along the R/G pixel boundary, col. 15 lines 13-48), among the plurality of sub-pixels in the display device, based on character shape data indicating character shapes (outline image of the character image); a first pixel of the plurality of pixels comprises a plurality of first sub-pixels (fig. 7A, col. 10 lines 61-63); at least one pixel neighboring the first pixel comprises a plurality of second sub-pixels (fig. 7A, col. 10 lines 61-63; a neighboring pixel to the pixel being currently processed); the control section determines an arrangement pattern (bitmap image) containing a plurality of elements (bitmap image contains bits indicating colors values, where 1 indicates the sub-component is turned on, and 0 indicates the sub-component is turned off), wherein a value of each of the plurality of elements is determined depending on whether or not the basic portion is assigned to a corresponding sub-pixel of the plurality of the first sub-pixels and the plurality of the second sub-pixels (white is used to indicate pixel sub-components which are turned on, pixel sub-components which are not white are turned off, col. 16 lines 8-26); the control section introduces a predetermined change (mapping portions of a scaled image into corresponding pixel units of the bitmap image) into the arrangement pattern, the predetermined change including one of replacement of a position of the basic portions and duplication of the basic portion (col. 15 lines 49-67, col. 16 lines 1-26, col. 17 lines 1-25), and determines a luminance level of the first pixel based on the changed arrangement pattern (different portions of the scaled image are used to independently determine the luminous intensity values for each sub-pixel, col. 15 lines 62-67, col. 16 lines 1-7, col. 17 lines 15-18 and lines 59-67, col. 18 lines 1-4), wherein the luminance level of the first pixel based on the changed arrangement pattern

(different portions of the scaled image are used to independently determine the luminous intensity values for each sub-pixel) is determined using a stored table (stored filter weights) indicating a correspondence between arrangement patterns of sub-pixels and luminance levels of sub-pixels arranged in a certain direction, which is one of the same as the predetermined direction and different from the predetermined direction (weighted scan conversion operation is to be used to determine luminous intensity values for pixel sub-components as part of a scan conversion operation; when weighting is applied, different size regions of the scaled image may be used to determine whether a particular pixel sub-component should be turned on or off or to a value in between, col. 13 lines 35-61, col. 15 lines 62-67, col. 16 lines 1-7, col. 17 lines 15-18 and lines 59-67, col. 18 lines 1-4, col. 30 lines 34-38).

Although Hill teaches the limitations as stated above, Hill does not explicitly teach to determine the luminance level of the first pixel based on the changed arrangement pattern using a stored table indicating a predetermined correspondence, and the correspondence indicated by the stored table is determined using a predetermined correction pattern of color element levels of sub-pixels neighboring a sub-pixel corresponding to the basic portion. However, Koyama teaches to use a stored brightness table to determine the luminance of a sub-pixel for a scaled image (stored brightness table corresponds to the stored table, scaled skeleton data corresponds to changed arrangement pattern, scaling operation is performed taking the sub-pixel arrangement into consideration, fig. 25-29). Koyama teaches that the color element level of a sub-pixel which is in the vicinity of a sub-pixel corresponding to the basic

portion of the character (color element levels of sub-pixels neighboring a sub-pixel corresponding to the basic portion) is determined using the correction patterns (predetermined correction pattern) included in the correction table, and the brightness table indicates the relationship (correspondence) between the color element level of a sub-pixel and the brightness level of the sub-pixel (the color element level of a sub-pixel as determined by the correction pattern is used to determine the brightness level of the sub-pixel; fig. 25-30, col. 19 lines 33-67, col. 20 lines 1-67, col. 21 lines 1-67, col. 22 lines 1-28). Therefore, it would have been obvious to one of ordinary skill in art at the time of present invention to use a stored table to determine the luminance level of the sub-pixel as taught by Koyama into the apparatus of Hill because by using a stored brightness table the color element level of each sub-pixel can easily be converted to a brightness level (col. 11 lines 16-25).

7. Regarding claim 3, Hill teaches the plurality of elements include a first element (current bit representing the sub-component of the pixel) and a second element neighboring the first element (bits of the neighboring sub-pixels, fig. 16); a value (turned on is indicated by bit value 1) of the first element indicates that the basic portion is assigned to a sub-pixel (fig. 16 shows pixel sub-components with white are turned on, which means the basic portion is assigned to that sub-pixels) relating to the first element; a value of the second element (turned off is indicated by bit value 0) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (fig. 16 shows the pixel sub-components are not white when the basic portion is not assigned to those sub-components) (fig. 15, 16, col. 16 lines 8-26); and the control

section determines the luminance level (luminous intensity value) of the first pixel based on another arrangement pattern (figs. 12A-B) which is modified (scan conversion) from said arrangement pattern (figs. 11A-B) such that a value of the second element is changed to indicate that the basic portion is assigned to the sub-pixel relating to the second element (col. 15 lines 49-67, col. 16 lines 1-26, col. 17 lines 15-18 and lines 59-67, col. 18 lines 1-4).

8. Regarding claim 4, Hill teaches the control section determines the luminance level of the first pixel based on a combination of a color of the character and a background color of the character and the arrangement pattern (col. 15 lines 62-67, col. 16 lines 1-37; scan conversion method that generates a bitmap image where "on" means the intensity value associated with the pixel sub-component produces the specified foreground color, and "off" means the intensity value associated with the pixel sub-component produces the specified background color; scan conversion method corresponds to control section; bitmap image/bitmap corresponds to arrangement pattern; "on"/"off" corresponds to values associated with the bits of the bitmap image; intensity value corresponds to luminance level; specified foreground color corresponds to color or the character; specified background color corresponds to background color of the character).

9. Regarding claim 5, Hill teaches the control section compares a combination of a color of the character and a background color of the character with a combination of a predetermined character color and a predetermined background color, and determines the luminance level of the first pixel based on a result of the comparison and the

arrangement pattern (col. 19 lines 29-37, col. 20 lines 7-9, col. 23 lines 58-67, col. 24 lines 1-13 and lines 31-36; scan conversion method where the luminous intensity of both a foreground and background colored pixel is determined, and portions of the image are compared to the desired foreground and background colors; image/bitmap image corresponds to arrangement pattern; foreground color corresponds to color of the character; background color corresponds to background color of the character; current pixel corresponds to first pixel; desired foreground color/foreground color pixel corresponds to predetermined character color; background color pixel corresponds to predetermined background color; luminance value/luminance intensity values corresponds to luminance level).

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Koyama, and further in view of Desai (US 6,282,328 B1).

11. Regarding claim 2, Hill teaches the plurality of elements include a first element (current bit representing the sub-component of the pixel) and a second element neighboring the first element (bits of the neighboring sub-pixels, fig. 16); a value (turned on is indicated by bit value 1) of the first element indicates that the basic portion is assigned to a sub-pixel (fig. 16 shows pixel sub-components with white are turned on, which means the basic portion is assigned to that sub-pixels) relating to the first element; a value of the second element (turned off is indicated by bit value 0) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (fig.

16 shows the pixel sub-components are not white when the basic portion is not assigned to those sub-components) (fig. 15, 16, col. 16 lines 8-26).

The combination of Hill and Koyama disclose the claimed limitations as stated, except that they do not explicitly teach the control section determines the luminance level of the first pixel is determined based on another arrangement pattern which is modified from said arrangement pattern such that a value of the first element is interchanged with a value of the second element. However, Desai teaches a method of providing morphological transformation of an image by rearranging pixels of the image, employed to effect a dilation transformation by identifying the maximum pixel intensity in each column (col. 1 lines 28-38, col. 2 lines 21-25 and lines 34-46; method of providing morphological transformation corresponds to control section; image corresponds to arrangement pattern; rearranged corresponds to modified; intermediate image corresponds another arrangement pattern; pixels from selected "neighborhoods", or regions, of the source image are rearranged corresponds to another arrangement pattern which is modified from said arrangement pattern; pixel intensity value corresponds to luminance level; in order to identify the maximum pixel intensity in each column, the pixel intensity of all the elements in the column needs to be determined, which corresponds to determining the luminance level of the first pixel; replacing each pixel (point) in the image with its brightest neighbor corresponds to a value of the first element is interchanged with a value of the second element). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to replace each pixel in the image with its brightest neighbor as taught by Desai and use it into the

apparatus of Hill and Koyama to determine the pixel intensity value because such system pertains to the morphological transformation of images via dilation, suitable for use with non-uniform offsets (col. 1 lines 15-18), and operates accurately and rapidly, without requiring unduly expensive processing equipment or without undue consumption of resources (col. 2 lines 1-4).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JWALANT AMIN whose telephone number is (571)272-2455. The examiner can normally be reached on 9:30 a.m. - 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A./
Examiner, Art Unit 2628

/Mark K Zimmerman/
Supervisory Patent Examiner, Art Unit 2628